REMARKS

This amendment is responsive to the Office Action dated June 26, 2007. Applicant has amended claims 1, 8, 23, 27, and 32, canceled claims 2 and 24, and added new claims 36-41. Claims 1, 3-23, and 25-41 are pending upon entry of this amendment.

As a preliminary matter, Applicant has amended claims 8 and 27 to correct a typographical error, and for reasons unrelated to patentability. No new matter has been added by way of this amendment.

Allowable Subject Matter

In the Office Action, the Examiner indicated that claims 12-16 are allowed. Applicant thanks the Examiner for the indication of patentability of claims 12-16.

Claim Objections

In the Office Action, the Examiner objected to claim 27 for certain informalities. Applicant has amended claim 27 to address the Examiner's objection.

Claim Rejection Under 35 U.S.C. § 102

In the Office Action, the Examiner rejected claims 23-25, 27-28 and 32 under 35 U.S.C. 102(e) as being anticipated by Fukuoka (US 2004/0085208). Applicant respectfully traverses the rejection to the extent such rejection may be considered applicable to the amended claims. Fukuoka fails to disclose each and every feature of the claimed invention, as required by 35 U.S.C. 102(e), and provides no teaching that would have suggested the desirability of modification to include such features.

For example, Fukuoka fails to teach or suggest a computer-readable medium comprising instructions to cause a processor to detect at least one radio frequency identification tag having the selected value in the specified memory location in the interrogation corridor if only a valid partial response is received, and indicating an alarm upon receiving only the valid partial response from at least one of the radio frequency identification tags having the selected value, as recited by independent claim 23 as amended. Similarly, Fukuoka fails to teach or suggest receiving only a partial response from a radio frequency identification tag in an interrogation

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corridor, and generating an alarm upon receiving the partial response to indicate that an
unauthorized article is present within the interrogation corridor, as recited by independent claim
32 as amended.

With regard to this element of claim 23, the Examiner stated that the feature of receiving
a partial response is met by Fukuoka's "receiving a response with no UID or tag information" at
paragraphs [0192], [0193], and [0197]. This passage of Fukuoka corresponds to FIG. 14.
Contrary to the Examiner's assertion, this passage of Fukuoka does not describe detecting at least
one RFID tag having a selected value in a specified memory if only a partial response is received.
Rather, Fukuoka describes a two-step process in which two separate commands are sent by an
RFID reader, and the process requires that a full response is received responsive to the first
command (the EAS check command) to determine whether any unchecked articles are present. If
so, a second command (the Inventory command) is issued to identify the particular article(s).
FIG. 14 of Fukuoka is reproduced below.

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FIG. 14

GATE
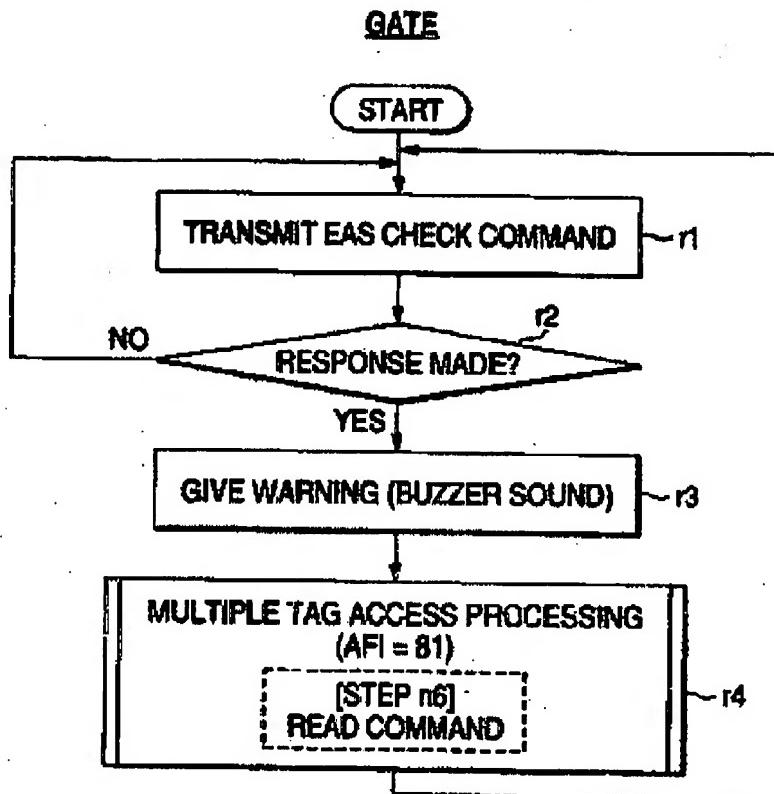
FIG. 14 and the accompanying description describes that an interrogator of the Fukuoka system first sends an EAS check command (step r1).[1] When the interrogator receives a full response to the EAS check command (step r2), a warning buzzer is sounded (step r3).[2] The EAS check command is used to identify articles having a checked-in status (i.e., a selected value in a specified memory location), and a full response is required to make such a determination. Secondly, the interrogator sends an inventory command for multiple tag access processing to obtain the UID of the RFID tags and book data (step r4).[3]

Fukuoka describes that if a library user runs through an exit gate carrying RFID tagged items so that there is not sufficient time to receive a response to the second command to obtain

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[1] Fukuoka, at para. [0182].
[2] Fukuoka, at para. [0185].
[3] Fukuoka, at paras. [0185]–[0190].

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the UID of the RFID tags, but there is at least enough time to receive the shorter response to the first EAS check command, and the warning buzzer can at least be sounded.[4] Thus, this makes further clear that Fukuoka requires receiving a full response to the first EAS check command. As further evidence, Fukuoka describes that a response to the EAS check command is made up of SOF (start of frame), a fixed value, CRC (cyclic redundancy check), and EOF (end of frame).[5] Fukuoka does not contemplate sounding the warning buzzer in response to receiving only a partial response to the EAS check command. As such, Fukuoka fails to teach or suggest detecting at least one radio frequency identification tag having the selected value in the specified memory location in the interrogation corridor if only a partial response is received, as recited by independent claim 23. Similarly, Fukuoka fails to teach or suggest receiving only a partial response from a radio frequency identification tag in an interrogation corridor, and generating an alarm upon receiving only the partial response to indicate that an unauthorized article is present within the interrogation corridor, as required by independent claim 32.

As mentioned above, Fukuoka further describes sending a second command of an Inventory command. If multiple RFID tags respond to the Inventory command at the same time, the responses may collide with each other due to the fact that each tag responds with a different UID.[6] However, in the Fukuoka system, no alarm is generated upon receiving colliding responses. Instead, in response to detecting a collision, the Fukuoka system invokes certain collision detection algorithms in order to individually read the UIDs from the RFID tags. Thus, Fukuoka fails to teach or suggest indicating an alarm upon receiving only the valid partial response from at least one of the radio frequency identification tags having the selected value, as required by independent claim 23 as amended, and generating an alarm upon receiving only the partial response to indicate that an unauthorized article is present within the interrogation corridor, as required by independent claim 32

In order to support an anticipation rejection under 35 U.S.C. 102(e), it is well established that a prior art reference must disclose each and every element of a claim. This well known rule

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[4] Fukuoka, at col. [0192].
[5] Fukuoka, at col. [0145].
[6] See Fukuoka, at para. [0152].

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of law is commonly referred to as the "all-elements rule."[7] If a prior art reference fails to disclose any element of a claim, then rejection under 35 U.S.C. 102(e) is improper.[8]

Of course, the claims dependent on independent claims 23 and 32, i.e., claims 24–30 and 33–34, incorporate all of the limitations of the respective base claims, and therefore are patentable for at least the reasons expressed above.

Fukuoka fails to disclose each and every limitation set forth in claims 23–25, 27–28 and 32. For at least these reasons, the Examiner has failed to establish a prima facie case for anticipation of Applicant's claims 23–25, 27–28 and 32 under 35 U.S.C. 102(b). Withdrawal of this rejection is requested.

Claim Rejection Under 35 U.S.C. § 103

Claims 1–11, 17, 26, 29–30, 33 and 35

In the Office Action, the Examiner rejected claims 1–11, 26, 29–30, 33 and 35 under 35 U.S.C. 103(a) as being unpatentable over Fukuoka in view of Shuey (US 6,816,538). In addition, the Examiner rejected claim 17 under 35 U.S.C. 103(a) as being unpatentable over Fukuoka in view of Shuey and further in view of Ginter (US 5,910,987). Applicant respectfully traverses the rejection to the extent such rejections may be considered applicable to the claims as amended. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

For example, as described in detail above with respect to independent claims 23 and 32, Fukuoka fails to teach or suggest detecting at least one radio frequency identification tag having the selected value in the specified memory location in the interrogation corridor if only a valid partial response is received, and indicating an alarm upon receiving only the valid partial response from at least one of the radio frequency identification tags having the selected value, as

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[7] See Hybritech Inc. v. Monoclonal Antibodies, Inc., 802 F.2d 1367, 231 USPQ 81 (CAFC 1986) ("it is axiomatic that for prior art to anticipate under 102 it has to meet every element of the claimed invention").
[8] Id.; see also Lewmar Marine, Inc. v. Barient, Inc. 827 F.2d 744, 3 USPQ2d 1766 (CAFC 1987); In re Bond, 910 F.2d 831, 15 USPQ2d 1566 (CAFC 1990); C.R. Bard, Inc. v. MP Systems, Inc., 157 F.3d 1340, 48 USPQ2d 1225 (CAFC 1998); Oney v. Ratliff, 182 F.3d 893, 51 USPQ2d 1697 (CAFC 1999); Apple Computer, Inc. v. Articulate Systems, Inc., 234 F.3d 14, 57 USPQ2d 1057 (CAFC 2000).

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recited by independent claim 1 as amended. Neither Shuey nor Ginter provides any teaching or suggestion to overcome this deficiency in the Fukuoka reference.

Of course, the claims dependent on independent claim 1, i.e., claims 2–11, 17, and 35, incorporate all of the limitations of the respective base claims, and therefore are patentable for at least the reasons expressed above.

Moreover, the dependent claims recite a number of additional features that are likewise not suggested by Fukuoka. For example, claim 35 recites validating a first portion of the received response that does not collide for the plurality of radio frequency identification tags without validating a remaining portion of the received response. Fukuoka in combination with Shuey or Ginter fails to teach or suggest such a feature.

Claims 18–22, 31, and 34

In the Office Action, the Examiner rejected claims 18–22 and 31 under 35 U.S.C. 103(a) as being unpatentable over Fukuoka, or in the alternative, as obvious over Stegmaier (US 2002/0180587). In addition, the Examiner rejected claim 34 under 35 U.S.C. 103(a) as being unpatentable over Fukuoka in view of Balch (US 5,909,178) or Frederick (US 6,906,629). Applicant respectfully traverses the rejections. The applied references fail to disclose or suggest the inventions defined by Applicant's claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Fukuoka

Independent claim 18 requires interrogating radio frequency identification tags in an interrogation corridor to identify presence of those tags having a selected value in a specified memory location, and detecting a collision in at least one bit of the specified memory location. Fukuoka fails to teach or suggest these features. As explained above, Fukuoka fails to teach or suggest detecting a collision in a bit of the same memory location as was specified in the interrogation. In contrast, Fukuoka describes transmitting an inventory command to determine the UID of any RFID tags in an area. Fukuoka describes that the inventory command is executed with AFI = 81; thus, each RFID tag in the area having a value of "81" in an AFI field will

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respond with its UID.[9] If multiple RFID tags respond at the same time, the responses may collide with each other due to the fact that each tag responds with a different UID.[10] In other words, Fukuoka describes that a collision may occur in the UID field, which is a different field than the memory location specified in the interrogation command, i.e., the AFI field. Fukuoka therefore fails to teach or suggest the elements required by independent claim 18.

With respect to independent claim 31, Fukuoka fails to teach or suggest detecting a collision between communications from radio frequency identification tags in an interrogation corridor, and generating an alarm upon detecting the collision to indicate that an unauthorized article is present within the interrogation corridor. As explained above, Fukuoka describes sending two separate commands: (1) an EAS check command, and (2) an inventory command. Fukuoka explains that since every RF tag makes the same response to the first EAS command, "the same data is returned at the same timing, so that if the data overlaps, it does not crash."[11] In other words, collisions will not result in response to the EAS command. Fukuoka describes that when the interrogator receives a full response to the first EAS check command, a warning buzzer is sounded. Thus, to the extent Fukuoka describes sounding an alarm, it is not in response to detecting a collision. The Fukuoka system may detect a collision in response to the second inventory command, but does not generate an alarm upon detecting the collision. Rather, in response to detecting the collision, Fukuoka performs an anticollision algorithm to obtain the UID of each of the tags.

Independent claim 31 requires detecting that an unauthorized article is present within the interrogation corridor simply in response to the single step of detecting a collision between communications from radio frequency identification tags in an interrogation corridor. Fukuoka provides no such teaching or suggestion.

Stegmaier

The Examiner also rejected independent claims 18 and 31 as obvious over Stegmaier in view of Fukuoka. The Examiner characterized Stegmaier as teaching detecting at least one tag having the selected value in the specified memory location if a collision is detected, citing

[9] Fukuoka, at para. [0186].
[10] See Fukuoka, at para. [0152].
[11] Fukuoka, at col. [0183].

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paragraph [0024] of Stegmaier. Applicant respectfully disagrees with the Examiner's

conclusions. The cited portion of Stegmaier describes an example interrogation sequence for

obtaining chip serial numbers (S/N) from three transponders. Stegmaier describes that a collision

occurs when some of the transponders return different values in one or more of the bits of the

serial number. Stegmaier states that "this situation needs specific treatment for assessing the full

digital information from all transponders," and then proceeds to apply various techniques to

obtain the full serial numbers from each of the tags.[12] Applicant's specification explains several

drawbacks with this technique:

> Most methods of determining whether articles present in the interrogation corridor
> have been checked out depend upon first individually detecting and identifying
> each tag in the field, and then checking determining the status of the articles
> associated with the identified tags. Some methods, for example, involve
> determining a serial number for each tag . . . .[13]

> This process can be time-consuming, especially if several tags exist in the field.
> For example, in order to obtain a complete tag serial number, only one tag can
> respond at a time. If more than one tag responds at a time, a collision occurs, the
> data received may be invalid, and neither tag's serial number can be obtained. To
> deal with this, some systems use an anti-collision process, which requires each tag
> to respond in a different time slot until all tags are heard. This added delay is
> undesirable in an exit control system because patrons are in the interrogation
> corridor for a very short period of time.[14]

Stegmaier in view of Fukuoka provides no teaching or suggestion of detecting at least one

radio frequency identification tag having the selected value in the specified memory location in

the interrogation corridor if a collision is detected, as recited by independent claim 18, or

generating an alarm upon detecting the collision to indicate that an unauthorized article is present

within the interrogation corridor, as recited by independent claim 31.

Of course, the claims dependent on independent claims 18 and 31, i.e., claims 19–22,

incorporate all of the limitations of the respective base claims, and therefore are patentable for at

least the reasons expressed above.

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[12] Stegmaier, at col. [0024].
[13] Specification at para. [0005].
[14] Specification at para. [0006].

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For at least these reasons, the Examiner has failed to establish a prima facie case for non-patentability of Applicant's claims 1–11, 17, 18–22, 26, 29–31, 33–35 under 35 U.S.C. 103(a). Withdrawal of this rejection is requested.

New Claims:

Applicant has added claims 36–41 to the pending application. The applied references fail to disclose or suggest the inventions defined by Applicant's new claims, and provide no teaching that would have suggested the desirability of modification to arrive at the claimed inventions. As one example, the reference fail to disclose or suggest a system comprising a plurality of radio frequency (RF) antennas set up to provide an interrogation corridor, wherein the RF antennas interrogate radio frequency identification tags in the interrogation corridor, and an RF reader coupled to the plurality of antennas, wherein the RF reader simultaneously receives a response from all of the radio frequency identification tags in the interrogation corridor, detects whether a collision occurs in at least one bit of a specified memory location, and detects at least one radio frequency identification tag having a selected value in the specified memory location in the interrogation corridor upon detecting a collision, as recited by claim 36. No new matter has been added by the new claims.

CONCLUSION

All claims in this application are in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Please charge any additional fees or credit any overpayment to deposit account number 50-1778. The Examiner is invited to telephone the below-signed attorney to discuss this application.

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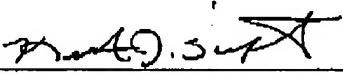
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